IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#19 Response

In re Application of)
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Quan Vu et al.)
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Serial No. 09/249,642)
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Filed: February 12, 1999)
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For: **METHOD OF AND APPARATUS FOR GENERATING A PRECISE FRAME RATE IN DIGITAL VIDEO TRANSMISSION FROM A COMPUTER SYSTEM TO A DIGITAL VIDEO DEVICE**)

Group Art Unit: 2612

Examiner: Wilson, J.

AMENDMENT AND RESPONSE TO OFFICE ACTION MAILED ON October 1, 2002

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Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

REMARKS

Applicants respectfully request further examination and reconsideration in view of the above amendments and the arguments set forth fully below. Claims 1-27 were pending. Claims 1-27 have been rejected. Claims 1-27 are currently pending in this application.

1/6/03 BS

Rejections Under 35 U.S.C. § 102

Within the Office Action, Claims 1-20 and 23-25 have been rejected under 35 U.S.C. §102 (e) as being anticipated by U.S. Patent No. 6,373,821 to Staats (hereinafter "Staats"). Staats teaches a method for setting a time stamp in the SYT field of packet headers for IEEE-1394 devices. Staats teaches stamping isochronous data packets with a presentation time stamp value determined according to a computed packet rate for the data. Staats teaches that a computed packet rate for the data can be a non-integer value. To achieve this non-integer value, Staats teaches using a data stream command language. The data stream command language is a set of commands that control data flow into or out of a data stream. Staats teaches that the data stream command language jump commands are used to allow a transmitter to send a frame with a different number of packets. Staats does not teach forming x number of first data blocks each

containing n units of data, forming y number of second data blocks each containing m units of data and combining x number of first data blocks and y number of second data blocks into a data stream to achieve the predetermined rate.

Within the Office Action, in the response to arguments section, it is stated that Staats specifically teaches that the transmitter needs to send 266 packets and sometimes send 267 packets. It is then stated that this is synonymous to the claimed first and second data blocks with n and m units of data. The applicants respectfully disagrees. Staats teaches that sometimes the transmitter will need to send 266 packets/frame and sometimes 267 packets/frame. [Staats, col. 6, lines 7-16] Staats does not teach forming x number of first data blocks each containing n units of data, forming y number of second data blocks each containing m units of data and combining x number of first data blocks and y number of second data blocks into a data stream to achieve the predetermined rate. Staats also does not teach evenly distributing the x number of first data blocks among the y number of second data blocks. As described above, Staats only teaches that sometimes the transmitter will need to send 266 packets/frame and sometimes 267 packets/frame.

In contrast to the teachings of Staats, the present invention is directed to a method of and apparatus for transmitting an isochronous video stream of data at a particular frame rate from a source device to a receiving device. The source device preferably determines a proper ratio of data packets versus video frames in response to the particular frame rate required and a cycle time for isochronous data. This proper ratio of data packets versus video frames rarely computes to an integer result. Accordingly, once the proper ratio of data packets versus video frames is determined, the source device preferably generates two groups of frames. A first group contains an integer value of packets nearest to and above the desired overall average ratio of data packets versus video frames. The source device also generates a second group of frames where each frame from this second group contains an integer value of packets nearest to and below the ratio of packets versus video frames. In order to achieve the desired frame rate, the source device generates a frame ratio containing a specific number of frames from the first group and the second group and forms the isochronous stream of video data. Accordingly, the frames from the first group and the frames from the second group are of a same type and have the same characteristics. The source device serially generates each of the frames in an order including a combination of the first group of frames and the second group of frames to achieve the overall desired average frame ratio. The source device then transmits the resulting isochronous video stream of data to the receiving device at the desired frame rate. As described above, Staats does not teach forming x number of first data blocks each containing n units of data, forming y

number of second data blocks each containing m units of data and combining x number of first data blocks and y number of second data blocks into a data stream to achieve the predetermined rate. Staats also does not teach evenly distributing the x number of first data blocks among the y number of second data blocks.

The independent Claim 1 is directed to a method of transmitting information from a source device at a predetermined rate. The method of Claim 1 includes forming x number of first data blocks wherein each of the first data blocks contains n units of data, forming y number of second data blocks wherein each of the second data blocks contains m units of data, and further wherein m is not equal to n and combining x number of first data blocks and y number of second data blocks into a data stream to achieve the predetermined rate. Claim 1 includes the further limitation that the first data blocks and the second data blocks are of a same type and have same characteristics. As described above, Staats does not teach forming x number of first data blocks each containing n units of data, forming y number of second data blocks each containing m units of data and combining x number of first data blocks and y number of second data blocks into a data stream to achieve the predetermined rate. For at least these reasons, the independent Claim 1 is allowable over the teachings of Staats.

The dependent Claim 3 includes the further limitation of evenly distributing the x number of first data blocks among the y number of second data blocks. As discussed above, Staats does not teach evenly distributing the x number of first data blocks among the y number of second data blocks. As described above, Staats only teaches that sometimes the transmitter will need to send 266 packets/frame and sometimes 267 packets/frame. For at least these reasons, the dependent Claim 3 is allowable over the teachings of Staats.

Claims 2-5 are all dependent upon the independent Claim 1. As discussed above, the independent Claim 1 is allowable over the teachings of Staats. Accordingly, Claims 2-5 are all also allowable as being dependent upon an allowable base claim.

The independent Claim 6 is directed to a method of transmitting information from a source device to a receiving device. The method of Claim 6 includes forming x number of first frames wherein each of the first frames contains n units of data, forming y number of second frames wherein each of the second frames contains m units of data and further wherein m is not equal to n, combining x number of the first frames and y number of the second frames into a stream of frames to achieve a predetermined frame rate and transmitting the stream of frames from the source device to the receiving device. Claim 6 includes the further limitation that the first frames and the second frames are of a same type and have same characteristics. As described above, Staats does not teach forming x number of first frames wherein each of the first

frames contains n units of data, forming y number of second frames wherein each of the second frames contains m units of data and combining x number of the first frames and y number of the second frames into a stream of frames to achieve a predetermined rate. For at least these reasons, the independent Claim 6 is allowable over the teachings of Staats.

The dependent Claim 9 includes the further limitation of evenly distributing the x number of first frames among the y number of second frames. As discussed above, Staats does not teach evenly distributing the x number of first frames among the y number of second frames. As described above, Staats only teaches that sometimes the transmitter will need to send 266 packets/frame and sometimes 267 packets/frame. For at least these reasons, the dependent Claim 9 is allowable over the teachings of Staats.

Claims 7-12 are all dependent upon the independent Claim 6. As discussed above, the independent Claim 6 is allowable over the teachings of Staats. Accordingly, Claims 7-12 are each also allowable as being dependent upon an allowable base claim.

The independent Claim 13 is directed to a source device for transmitting information at a predetermined frame rate. The source device of Claim 13 comprises a controller for generating a data stream containing a plurality of first frames each including x packets of data and a plurality of second frames each including y packets of data to achieve the predetermined frame rate, wherein the data stream is transmitted at the predetermined frame rate and y is not equal to x. Claim 13 includes the further limitation that the first frames and the second frames are of a same type and have same characteristics. As described above, Staats does not teach generating a data stream including a plurality of first frames each including x packets of data and a plurality of second frames each including y packets of data to achieve the predetermined frame rate. For at least these reasons, the independent Claim 13 is allowable over the teachings of Staats.

Claims 14-16 are all dependent upon the independent Claim 13. As discussed above, the independent Claim 13 is allowable over the teachings of Staats. Accordingly, Claims 14-16 are each also allowable as being dependent upon an allowable base claim.

The independent Claim 17 is directed to a system for transmitting information at a predetermined frame rate. The system of Claim 17 comprises a source device for generating a data stream containing a plurality of first frames each including x packets of data and a plurality of second frames each including y packets of data to achieve the predetermined frame rate and y is not equal to x, wherein the first frames and the second frames are of a same type and have same characteristics, and a remote receiver coupled to the source device and configured to receive the data stream at the predetermined frame rate. As described above, Staats does not teach generating a data stream containing a plurality of first frames each including x packets of

data and a plurality of second frames each including y packets of data to achieve the predetermined frame rate and y is not equal to x. For at least these reasons, the independent Claim 17 is allowable over the teachings of Staats.

Claims 18-20 and 23-25 are all dependent on the independent Claim 17. As discussed above, the independent Claim 17 is allowable over the teachings of Staats. Accordingly, Claims 18-20 and 23-25 are each also allowable as being dependent upon an allowable base claim.

Rejections Under 35 U.S.C. § 103

Within the Office Action, Claims 21, 22, 26 and 27 have been rejected under 35 U.S.C. §103 (a) as being unpatentable over Staats. Claims 21 and 22 are both dependent on the independent Claim 17. As discussed above, the independent Claim 17 is allowable over the teachings of Staats. Accordingly, Claims 21 and 22 are both also allowable as being dependent upon an allowable base claim.

The independent Claim 26 is directed to a system for transmitting information at a predetermined frame rate equal to 29.97 frames per second within an IEEE 1394 network of devices. The system of Claim 26 comprises a source device for generating a data stream containing 9336 first frames, each including 267 packets of data, and 664 second frames, each including 266 packets of data, to achieve the predetermined frame rate of 29.97 frames per second, wherein the first frames and the second frames are of a same type and have same characteristics and a remote receiver coupled to the source device by the IEEE 1394 network of devices, wherein the remote receiver receives the data stream from the source device at the predetermined frame rate. As recognized with the Office Action, Staats fails to disclose a data stream containing 9336 first frames and 664 second frames. It is stated in the Office Action that this is an obvious matter of design choice. The applicants respectfully disagree. Staats cites an NTSC compatible device with 266.973 data packets per frame, as an example. [Staats, col. 5, line 64 - col. 6, line 12] However, as discussed above, Staats only teaches that sometimes the transmitter will need to send 266 packets/frame and sometimes 267 packets/frame. As evidence that the limitation of a data stream containing 9336 first frames, each including 267 packets of data, and 664 second frames, each including 266 packets of data, is not an obvious design choice, even though Staats cites as an example an NTSC compatible device with 266.973 data packets per frame, Staats does not describe such a data stream with 9336 first frames and 664 second frames. As discussed above, Staats only teaches that sometimes the transmitter will need to send 266 packets/frame and sometimes 267 packets/frame. Accordingly, Staats does not teach or make obvious a source device for generating a data stream containing 9336 first frames, each

including 267 packets of data, and 664 second frames, each including 266 packets of data. For at least these reasons, the independent Claim 26 is allowable over the teachings of Staats.

The independent Claim 27 is directed to a method of transmitting information from a source device to a receiving device over an IEEE 1394 network of devices. The method of Claim 27 comprises forming 9336 first frames wherein each of the first frames contains 267 packets of data, forming 664 second frames wherein each of the second frames contains 266 packets of data, combining the 9336 first frames and the 664 second frames into a stream of frames to achieve a predetermined frame rate of 29.97 frames per second and transmitting the stream of frames from the source device to the receiving device over the IEEE 1394 network of devices, wherein the first frames and the second frames are of a same type and have same characteristics. As described above, Staats does not teach or make obvious forming 9336 first frames wherein each of the first frames contains 267 packets of data, forming 664 second frames wherein each of the second frames contains 266 packets of data and combining the 9336 first frames and the 664 second frames into a stream of frames to achieve a predetermined frame rate of 29.97 frames per second. For at least these reasons, the independent Claim 27 is allowable over the teachings of Staats.

For the reasons given above, Applicants respectfully submit that all of the claims are in a condition for allowance, and allowance at an early date would be appreciated. Should the Examiner have any questions or comments, they are encouraged to call the undersigned at (408) 530-9700 to discuss the same so that any outstanding issues can be expeditiously resolved.

Respectfully submitted,
HAVERSTOCK & OWENS LLP

Dated: December 23, 2002

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CERTIFICATE OF MAILING (37 CFR § 1.8(a

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the U.S. Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to the: Assistant Commissioner for Patents, Washington D.C. 20231

HAVERSTOCK & OWENS LLP

12/23/02